

BEFORE THE
COUNCIL OF THE CITY OF NEW ORLEANS

IN RE: APPLICATION OF ENTERGY NEW)
ORLEANS, INC. FOR APPROVAL TO)
CONSTRUCT NEW ORLEANS POWER) DOCKET NO. UD-16-02
STATION AND REQUEST FOR COST RECOVERY)
AND TIMELY RELIEF)

DIRECT TESTIMONY

OF

JOSEPH A. VUMBACO, P.E.

ON BEHALF OF

THE ADVISORS TO THE
COUNCIL OF THE CITY OF NEW ORLEANS

NOVEMBER 20, 2017

PREPARED DIRECT TESTIMONY

OF

JOSEPH A. VUMBACO, P.E.

1 **I. INTRODUCTION**

2 **Q. PLEASE STATE YOUR NAME, BUSINESS ADDRESS AND OCCUPATION.**

3 **A.** My name is Joseph A. Vumbaco. My business address is 8055 East Tufts Avenue, Suite
4 1250, Denver, Colorado, 80237. I am the Managing Partner of the firm, Legend Consulting
5 Group Limited of Denver, Colorado (“Legend”) and a Registered Professional Engineer in
6 the states of Louisiana, Colorado, Connecticut, Utah and Texas.

7 **Q. ON WHOSE BEHALF DO YOU APPEAR IN THIS PROCEEDING?**

8 **A.** I am presenting testimony on behalf of the Advisors to the Council of the City of New
9 Orleans (“Council”) (the “Advisors”). The Council regulates the rates, terms, and
10 conditions of electric and gas service of Entergy New Orleans, Inc. (“ENO”). ENO is an
11 Entergy Operating Company (“EOC”)¹ and an affiliate of Entergy Corporation
12 (“Entergy”).

¹ The EOCs are comprised of: Entergy Arkansas, Inc. (“EAI”), Entergy Mississippi, Inc. (“EMI”), Entergy Louisiana, LLC (“ELL”), Entergy Texas, Inc. (“ETI”), and ENO.

1 **Q. PLEASE SUMMARIZE YOUR RELEVANT EDUCATIONAL BACKGROUND**
2 **AND PROFESSIONAL EXPERIENCE.**

3 **A.** Exhibit No. ____ (JAV-2) provides a summary of my relevant education and professional
4 experience and Exhibit No. ____ (JAV-3) lists my previous testimony experience.

5 **Q. CAN YOU BRIEFLY SUMMARIZE THE APPLICATION(S) BY ENO THAT**
6 **YOUR TESTIMONY IS INTENDED TO ADDRESS?**

7 **A.** Yes. On June 20, 2016, ENO filed with the Council its “*Application of Entergy New*
8 *Orleans, Inc. for Approval to Construct New Orleans Power Station and Request for Cost*
9 *Recovery and Timely Relief*” (“Initial Application”). On November 18, 2016, ENO filed its
10 required “*Supplemental Testimony of Entergy New Orleans, Inc. ("ENO") for Approval to*
11 *Construct New Orleans Power Station and Request for Cost Recovery and for Timely*
12 *Relief*” (“Supplemental Filing”) with the Council that included the analysis requested by
13 the Advisors. On July 6, 2017, ENO filed its “*Supplemental and Amending Application of*
14 *Entergy New Orleans, Inc. for Approval to Construct New Orleans Power Station and*
15 *Request for Cost Recovery and Timely Relief*” (“Supplemental Application”). I refer to
16 these three filings collectively as the “Application”. On August 10, 2017, Council
17 Resolution No. R-17-426 established a new procedural schedule in the instant docket. My
18 testimony is filed pursuant to that procedural schedule.

19 **Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY IN THIS PROCEEDING?**

1 **A.** The purpose of my testimony is to provide the Council with a summary of the results of
2 the Advisors’ examination and evaluation of the Application, issues raised in Intervenor
3 testimony, and other information relevant to the instant docket.

4 **II. INTRODUCTION OF ADVISOR WITNESSES**

5 **Q. WHO ARE THE ADVISOR WITNESSES PROVIDING TESTIMONY IN THIS**
6 **DOCKET?**

7 **A.** Advisor witnesses Mr. Philip J. Movish, Mr. Joseph W. Rogers, P.E., Mr. Victor M. Prep,
8 P.E., and Mr. Byron S. Watson, CFA, CRRA are providing direct testimony in this
9 proceeding.

10 **Q. CAN YOU PLEASE BRIEFLY SUMMARIZE THE TESTIMONY OF EACH**
11 **ADVISOR WITNESS?**

12 Advisor witness Movish discusses the North American Electric Reliability Corporation’s
13 (“NERC”) transmission reliability standards as they apply to ENO in the instant docket.
14 He concludes that ENO’s system is currently at risk for significant reliability problems in
15 the event of a multi element NERC contingency (i.e., a NERC Category P6 contingency)
16 and such risk will persist until ENO takes corrective action. Mr. Movish discusses his
17 evaluation of ENO’s proposed solutions and potential alternatives to address ENO’s
18 current and projected NERC reliability standards’ violations, and concludes that a “do
19 nothing” approach to ENO’s system problems represents a potentially excessive risk to
20 New Orleans. He discusses ENO’s alternatives that are modeled to resolve its NERC

1 system reliability violations, and discusses the feasibility and risks associated with each
2 such case. Finally, Mr. Movish discusses the system reliability and potential public safety
3 benefits of having a local black start capable generating unit in New Orleans.

4 Advisor witness Rogers discusses his evaluation of alternatives to address ENO's system
5 reliability risks from an economic, operational, and Midcontinent Independent System
6 Operator, Inc. ("MISO") participation perspective. Mr. Rogers discusses his evaluation of
7 ENO's forecast for MISO capacity market auction prices. Mr. Rogers also evaluates and
8 discusses his conclusions based on the economic analysis presented by Advisor witness
9 Watson. Finally, Mr. Rogers discusses his the reasons for his preference among the two
10 generating unit alternatives proposed by ENO in the instant docket.

11 Advisor witness Prep discusses appropriate cost recovery mechanisms for fixed costs
12 related to the investment the Council may approve in the instant docket. Mr. Prep also
13 discusses cost allocation methodologies relevant to the instant docket.

14 Advisor witness Watson discusses ENO's economic analysis in the instant docket, and
15 presents estimates of revenue requirement and typical bill impacts. Mr. Watson also
16 discusses ENO's last Council-approved Return on Equity ("ROE") and provides an
17 alternative analysis based on an illustrative ROE.

1 **III. CONCLUSIONS**

2 **Q. PLEASE SUMMARIZE YOUR MAJOR CONCLUSIONS BASED UPON THE**
3 **ADVISORS' EXAMINATION AND EVALUATION OF THE APPLICATION,**
4 **RELATED DISCOVERY AND INTERVENOR TESTIMONY.**

5 **A.** Yes. Based upon my review of the Application, the discovery in this proceeding, the
6 testimony of the Intervenors and that of the other Advisors, I conclude:

7 1. Under the criteria of a NERC P6 contingency, ENO customers are presently at risk
8 of significant electrical outages of potentially long duration and such risk will persist until
9 some form of corrective action is taken by either the installation of a significant amount of
10 timely new transmission additions, or the addition of generation in the eastern section of
11 ENO's service area.

12 2. ENO has employed inconsistent peak load assumptions as between its transmission
13 studies and economic studies when considering the amount of DSM peak load reductions
14 which would occur with the continued implementation of the Council's 2% DSM goal and
15 the appropriate capacity factor of any potential solar generation. Such inconsistent
16 assumptions can affect the actual load to be served in the transmission studies in the range
17 of 48.1 MW to 63.1 MW over the period analyzed.

18 3. ENO's assumption in its transmission planning studies of the installation of 100
19 MW or 200 MW of solar generation, effectively at Michoud and the varying capacity
20 factors assumed for solar, calls into question the veracity of such studies.

1 4. Should the Council chose to affect a transmission only solution to the reliability
2 problems that exist today and are expected to continue in the future unless corrected, the
3 Council should immediately direct ENO to: (i) file with the Council information
4 demonstrating that a transmission only solution to the reliability problems is realistically
5 achievable, (ii) that its proposed upgrade projects can be constructed, (iii) the realistic
6 timing of each project, (iv) the potential impacts of the project(s) delay on ENO's
7 transmission reliability, and (v) the definitive costs for each project within the ensuing six
8 to nine months for its evaluation and final approval prior to its implementation.

9 5. ENO's Regulatory Approval Plan should be rejected for the reasons discussed in
10 Mr. Prep's testimony, and instead Mr. Prep's recommendations should be implemented as
11 they would provide the Company a fair opportunity to recover its costs and generate a fair
12 return on its investment, while providing a fair allocation of ENO's fixed costs.

13 6. Based on my review of the testimony of Mr. Rogers and the analysis conducted by
14 Mr. Watson, I conclude that the need for any local generation capacity such as the RICE
15 Alternative ("128 MW Reciprocating Internal Combustion Engine ("RICE") generating
16 unit") or the CT Alternative ("226 MW Combustion Turbine Peaking Unit ("CT")) is not
17 economically justified by ENO. Mr. Rogers concludes that ENO has not demonstrated the
18 economic attractiveness of either the CT Alternative or the RICE Alternative as compared
19 to a scenario involving near term transmission upgrades (i.e., as soon as possible), but no
20 local dispatchable generation ("Transmission Alternative"). Specifically, Mr. Rogers
21 testifies that, on an economic basis, the Council may be indifferent between the CT

1 Alternative and the Transmission Alternative when employing ENO's MISO capacity
2 price estimates, and Mr. Rogers presents the results of analysis showing that the
3 Transmission Alternative is most economically attractive compared to both the CT
4 Alternative and the RICE Alternative when employing a lower capacity price estimate
5 more in line with current market prices.² However, as I discuss elsewhere in my testimony,
6 a public interest determination is not based solely on economic considerations.

7 7. When considering the MISO capacity market, transmission constructability
8 uncertainty, operational, and economic risk to ratepayers, as discussed in the testimonies
9 of Messrs. Rogers and Movish, the generation alternative that best hedges and partially
10 mitigates such risk is the construction of the RICE Alternative in combination with the
11 incorporation of renewable technologies and realistically achievable DSM potential in
12 ENO's service territory.

13 8. At this time and based upon: (i) the information provided in the Application; (ii)
14 the discovery and transmission models provided as of the date of my testimony, inclusive
15 of ENO's assumptions contained therein; (iii) the Advisor's evaluation of same, as
16 contained in the Direct Testimony of the Advisor witnesses filed concurrently in the instant
17 docket; and (iv) the RICE Alternative's ability to mitigate risk and provide operational
18 flexibility; the RICE Alternative presents the most viable alternative for the Council's

² Direct Testimony of Joseph A. Rogers, P.E., Table 6 at page 45.

1 consideration in the instant docket to resolve ENO's current transmission system reliability
2 issues and, accordingly, is the Advisors' collective recommendation to the Council for
3 approval.

4 **Q. MR. VUMBACO, IS THE CONSTRUCTION OF THE RICE ALTERNATIVE IN**
5 **COMBINATION WITH THE INCORPORATION OF RENEWABLE**
6 **TECHNOLOGIES AND REALISTICALLY ACHIEVABLE COST EFFECTIVE**
7 **DSM POTENTIAL IN ENO'S SERVICE TERRITORY IN THE PUBLIC**
8 **INTEREST?**

9 **A.** Yes, as further discussed hereinafter in my testimony.

10 **IV. THE PUBLIC INTEREST STANDARD**

11 **Q. BY WHAT STANDARD DOES ENO REQUEST THE COUNCIL REVIEW ITS**
12 **REQUEST FOR APPROVAL OF ITS NOPS PROPOSAL?**

13 **A.** In its Supplemental Application, ENO requests that the Council, "Find that the Company's
14 construction of NOPS, either the originally proposed CT or the Alternative Peaker [i.e., the
15 RICE Alternative], serves the public convenience and necessity and is in the public interest,
16 and is therefore prudent".³

³ Supplemental Application, Prayer for Relieve item 1 at page 27.

1 **Q. WHAT IS THE STANDARD THAT THE COUNCIL SHOULD EMPLOY IN ITS**
2 **EVALUATION OF ENO’S APPLICATION?**

3 **A.** The regulatory standard that the Council should employ in its evaluation of ENO’s
4 Application is a determination of whether any of the alternatives for Council consideration
5 and their related cost recovery serves the public interest. Should more than one alternative
6 be deemed by the Council to serve the public interest, the Council should determine which
7 such alternative best serves the public interest.

8 **Q. WHAT IS THE PUBLIC INTEREST STANDARD IN UTILITY REGULATION?**

9 **A.** The public interest theory of regulation seeks, in general terms, to protect and benefit the
10 public at large through a balancing of interests in any regulatory decision. With the filing
11 of ENO’s Application, the Council must determine whether ENO’s proposed construction
12 of either the CT Alternative or the RICE Alternative, or any other alternative such as the
13 Transmission Alternative, and the associated cost recovery, is both necessary and serves
14 the public interest. Put differently, the Council must determine whether any alternative for
15 Council consideration represents an economic and prudent means by which ENO may
16 ensure safe and reliable electric service to New Orleans and whether such an alternative
17 would provide overall benefits to the public.

18 **Q. IN DETERMINING WHETHER THE COUNCIL’S DECISION IN THIS DOCKET**
19 **IS IN THE PUBLIC INTEREST, IS THERE A SPECIFIC FORMULA OR**
20 **PARTICULAR SET OF ANALYSES THAT CAN BE RELIED UPON?**

1 **A.** No. Many times the definition of what is in the public interest is referred to as a “net
2 benefits” test, but such a test encompasses more than a simple algorithm or numerical
3 analyses and often results in a subjective balancing of interests by the regulator in making
4 its determination. Such is the case with the Application and the scenarios modeled as
5 resolving ENO’s risk of transmission system failure in the event of a NERC P-6
6 contingency occurrence as identified by Mr. Movish. While Mr. Rogers presents his
7 evaluation of the relative economic attractiveness of seven modeled cases, both Advisor
8 witnesses Movish and Rogers discuss other important factors such as operational, MISO
9 capacity market and reliability risks related to each of ENO’s modeled scenarios. In making
10 a public interest determination it is important to factor all such matters in the Council’s
11 determination of whether Council approval of a particular course of action is in in the
12 public interest “in toto.”

13 **V. INTERVENOR TESTIMONIES**

14 **Q. HAVE YOU REVIEWED THE TESTIMONY OF DR. BEVERLY WRIGHT, PH.D.**
15 **IN THIS DOCKET?**

16 **A.** Yes.

17 **Q. DO YOU AGREE WITH DR. WRIGHT’S CONCLUSION THAT THE**
18 **CONFLICTING ROLES OF THE NEW ORLEANS CITY COUNCIL**
19 **CONSULTANTS UNDERMINE THE FAIRNESS OF THIS DOCKET AS THE**
20 **CONSULTANTS ARE THE SAME INDIVIDUALS WHO ALSO**

1 **RECOMMENDED THE CITY COUNCIL AGREE TO ENTERGY BUILDING A**
2 **NEW POWER PLANT IN NEW ORLEANS WITH THE MICHLOUD SITE AS A**
3 **POTENTIAL LOCATION FOR THE POWER PLANT?**

4 **A.** No, for several reasons. As I further discuss in my testimony hereinafter, Dr. Wright,
5 among other things, misunderstands the process used by the Council in considering the
6 Settlement Agreement; the actual historical importance of operation and generation in the
7 provision of reliable electrical service in the greater New Orleans metropolitan area; the
8 actual terms of the Settlement Agreement; the collective benefit to New Orleans consumers
9 of the Settlement Agreement; and the documented actions of the Advisors.

10 **Q. CAN YOU PLEASE BRIEFLY SUMMARIZE THE HISTORY OF THE**
11 **PLANNING AND OPERATION OF THE ENTERGY OPERATING COMPANIES?**

12 **A.** Yes. In order to understand the full context of the matters contained in Council Resolution
13 R-15-524 (Council Docket Nos. UD-13-03 and UD-13-04), wherein the Council issued an
14 order approving the proposed settlement in FERC Docket No. ER14-75 which terminated
15 the Entergy System Agreement (System Agreement) and provided for ENO (and the other
16 remaining Entergy Operating Companies (OPCOs) to terminate the System Agreement on

1 August 31, 2016 (Settlement Agreement), one should be familiar with the history of the
2 planning and operation of the OPCOs⁴ under the provisions of the System Agreement.

3 **Q. PLEASE BRIEFLY SUMMARIZE THE FORMER SYSTEM AGREEMENT.**

4 **A.** Over the years, until its termination in 2016, the then existing Entergy Operating
5 Companies and Entergy's service company subsidiary, Entergy Services, Inc., were parties
6 to the System Agreement. The System Agreement governed the planning, operations and
7 sharing of costs of the OPCOs. FERC noted in Opinion No. 234, the System Agreement
8 (and its earlier versions dating back to 1951) "have provided the contractual basis for
9 planning and operating the companies' generating units on a single-system basis, and also
10 have provided a basis for equalizing certain cost imbalances that result from this method
11 of planning and operating the units."⁵

12 Over the years ENO benefited from being a party to the System Agreement and the
13 economy of scale that it provided for ENO - the smallest of the OPCOs. ENO was able to
14 achieve reserve sharing, equalization of transmission costs, deemed deliverability of power
15 regardless of its origin, and the exchange of energy among the OPCOs as part of a network
16 of transmission facilities and a much larger pool of generation, subject to security
17 constrained economic dispatch.

⁴ At the time of the termination of the System Agreement in 2016, the Entergy Operating Companies who were the remaining parties to the System Agreement were ENO, Entergy Louisiana, LLC (ELL) and Entergy Texas, Inc. (ETI).

⁵ Opinion No. 234, 31 FERC at 61,635.

1 With the early exit of EAI and EMI from the System Agreement⁶, and the Council and
2 other Entergy regulators' approval of the OPCOs to join MISO⁷ Regional Transmission
3 Organization (RTO), it was obvious that the days of the System Agreement were numbered
4 - as it was being replaced by a more efficient real time electricity market.

5 **Q. TO YOUR KNOWLEDGE, WERE ANY OF THE INTERVENORS IN THE**
6 **INSTANT DOCKET INTERVENORS OR PARTIES TO FERC DOCKET NO.**
7 **ER14-75?**

8 **A.** No.

9 **Q. WHAT PROCESS DID THE COUNCIL EMPLOY TO CONSIDER AND**
10 **EVALUATE THE SETTLEMENT AGREEMENT IN FERC DOCKET NO. ER15-**
11 **75?**

12 **A.** As discussed by the Council in its Resolution R-15-437, the Council desired that all parties
13 affected by the Settlement Agreement be provided an opportunity to understand the
14 proposal, submit comments and have their views considered prior to the Council's final
15 consideration of the agreement.⁸ As such, on September 3, 2015 in Resolution R-15-437,
16 the Council established a procedural schedule that allowed the parties to its Docket Nos.
17 UD-13-03 and UD-13-04 and members of the public to submit comments and reply

⁶ EAI and EMI had ceased to be parties to the System Agreement on December 18, 2013 and November 8, 2015, respectively.

⁷ Now the Midcontinent Independent System Operator, Inc.

⁸ Council Resolution R-15-437 at page 4.

1 comments regarding the then proposed agreement which the Council would consider in
2 rendering its decision on the Settlement Agreement. Consistent with the Council's practice
3 generally, the process included the publication of notice of the proceedings.

4 **Q. DID THE INTERVENORS IN THE INSTANT DOCKET INTERVENE IN THE**
5 **DOCKETS OR PROVIDE COMMENTS AS PROVIDED FOR IN RESOLUTION**
6 **R-15-437?**

7 **A.** While the Alliance for Affordable Energy (AAE) obviously was aware of the settlement as
8 shown is Exhibit No. ____ (JAV-4), they and the other Intervenor in the instant docket
9 chose not to comment or participate in the Council's dockets.

10 **Q. DID ANY OTHER ENTITIES OR PERSONS INTERVENE IN THE TWO**
11 **COUNCIL DOCKETS (NOS. UD-13-03 AND UD-13-04)?**

12 **A.** No.

13 **Q. IN THE PUBLIC MEETINGS HELD BY THE UTILITY, CABLE,**
14 **TELECOMMUNICATION & TECHNOLOGY COMMITTEE ("UCTTC") OF**
15 **THE COUNCIL AND THE FULL COUNCIL (SEPTEMBER 30, 2015 AND**
16 **NOVEMBER 5, 2015, RESPECTIVELY) WHERE THE SETTLEMENT**
17 **AGREEMENT WAS CONSIDERED AND RESOLUTION R-15-524 WAS**
18 **PRESENTED FOR COMMITTEE AND SUBSEQUENT FULL COUNCIL**
19 **CONSIDERATION, DID ANY OF THE INTERVENORS IN THE INSTANT**
20 **DOCKET PROVIDE COMMENTS?**

1 **A.** No.

2 **Q. WHAT DO YOU CONCLUDE FROM THE PROCESS PUT IN PLACE BY THE**
3 **COUNCIL TO CONSIDER THE SETTLEMENT AGREEMENT IN COUNCIL**
4 **DOCKET NOS. UD-13-03 AND UD-13-04?**

5 **A.** The process put in place by the Council was open, transparent and sought public input prior
6 to and during its deliberations on the Settlement Agreement and its terms and conditions.
7 There was no "...separate process outside of Council regulations, public notice and Council
8 utility dockets..." as Dr. Wright mistakenly alleges.

9 **Q. MR. VUMBACO, EARLIER YOU MENTIONED "SECURITY CONSTRAINED**
10 **ECONOMIC DISPATCH." CAN YOU PLEASE DESCRIBE WHAT THOSE**
11 **COMBINED TERMS MEAN?**

12 **A.** Yes. A security constrained dispatch is operated as scheduled and/or controlled by the
13 electrical system operator to obtain the lowest reasonable cost of energy consistent with
14 the requirements of daily operating generation reserve, voltage control, electrical stability,
15 loading of facilities, and continuity of service to the customers of the utility.

16 **Q. WHAT IS THE IMPORTANCE OF SECURITY CONSTRAINED DISPATCH**
17 **WHEN EXAMINING THE RELIABILITY, STABILITY AND VOLTAGE**
18 **CONTROL IN THE NEW ORLEANS' SERVICE AREA OF ENO?**

19 **A.** As Mr. Movish explains in his testimony, the ENO service territory resides in the Entergy
20 Amite South planning region of which the Downstream of Little Gypsy (DSG) region is a

1 sub-region and encompasses the greater New Orleans metropolitan area. As Mr. Movish
2 discusses in his testimony, DSG is a transmission constrained region. Approximately one-
3 third of the DSG firm peak load is ENO customer load.

4 Since the 1990's and when the Michoud generating station was fully operable, its units
5 were considered "reliability must run" units by Entergy in the DSG area (Exhibit No. ____
6 (JAV-5)). Furthermore, until Entergy entered the MISO RTO late in 2013 and the
7 operational control and dispatch of its generation and transmission system were assumed
8 by MISO, Michoud Unit No. 3 continued to be one of three units in the DSG area that were
9 required to be committed to operation during high load periods due to local area voltage
10 problems and in the event of electrical system contingencies (Exhibit No. ____ (JAV-6)).

11 **Q. WERE THE COUNCIL'S ADVISORS AWARE OF THESE SECURITY**
12 **CONSTRAINED OPERATING CRITERIA DURING THE APPROXIMATELY**
13 **TWO YEARS OF NEGOTIATIONS RELATED TO THE TERMINATION OF**
14 **THE SYSTEM AGREEMENT?**

15 **A.** Yes, the Advisors were well aware of these security constrained operating criteria for
16 generation in the Amite South planning region since the mid to late 1990s. And, with the
17 pending retirement of the last Michoud unit being considered by ENO in early 2015 time
18 frame, the Advisors were concerned about the resulting absence of any generation in the
19 eastern region of ENO as discussed by Mr. Movish in his testimony.

20 **Q. IN PART, WAS THIS ISSUE ADDRESSED BY THE PARTIES IN THE**
21 **SETTLEMENT AGREEMENT?**

1 **A.** Yes, the most relevant sections of the Settlement Agreement (Exhibit No. ____ (JAV-7))
2 that address this concern are Sections II.D and II.E. All of the future generation options
3 for ENO in Section II.D refer to generating units located in Amite South. The option in
4 Section II.E is located within the DSG transmission constrained area of Amite South.

5 **Q. DOES THE SETTLEMENT AGREEMENT IN SECTION II.E PROVIDE FOR**
6 **“...THE CITY COUNCIL AGREE TO ENTERGY BUILDING A NEW POWER**
7 **PLANT IN NEW ORLEANS...” AS ALLEGED BY DR. WRIGHT IN HER**
8 **TESTIMONY?**

9 **A.** No, quite to the contrary. Dr. Wright misunderstands the provisions of Section II.E, which
10 provide in part at subsection (3):

11 “The commitments set forth in this Section II.E are subject to mutually satisfactory
12 resolution of all material considerations, including, without limitation: (a) financial
13 feasibility for ENO; (b) affordability for ENO customers; (c) economic feasibility
14 in comparison to other potential projects, locations or alternatives; (d) timely rate
15 recovery, (e) regulatory jurisdiction over such facility(ies) to the extent not owned
16 by ENO; and (f) consistency with sound utility practice and planning principles.”
17 (emphasis added)

18 As can be clearly seen from an objective, plain reading of Subsection II.E.(c) of the
19 Settlement Agreement, there is absolutely no “prior agreement with Entergy to build a new
20 gas power plant” by the Council or its Advisors in this subsection, or anywhere else in the
21 Settlement Agreement as alleged by Dr. Wright. Quite to the contrary, it provides the

1 Council the opportunity - under a non-exclusive set of criteria - to consider a new power
2 plant in New Orleans, but not the obligation. Such consideration is now underway in the
3 regulatory process established by the Council in the instant docket.

4 **Q. HAVE THE COUNCIL’S ADVISORS EVER RECOMMENDED TO THE**
5 **COUNCIL THAT IT AGREE TO THE GENERATION BEING PROPOSED BY**
6 **ENO IN THE INSTANT DOCKET “PRIOR TO ANY PUBLIC REVIEW” AS**
7 **ALLEGED BY DR. WRIGHT?**

8 **A.** No, quite to the contrary. The Advisors have, in their comments before the UCTTC, been
9 supportive of widespread community involvement/outreach, as reflected in their
10 recommendation that the Council adopt Resolution No. R-17-426,⁹ that in establishing the
11 procedural schedule on ENO’s Supplemental Application, requires ENO to conduct no less
12 than five - well-advertised - public outreach meetings (one in each Council district) and for
13 its Council Utilities Regulatory Office to conduct one public meeting on ENO’s
14 Application in the Council chambers.

15 **Q. YOU MENTIONED EARLIER THERE WERE COLLECTIVE BENEFITS TO**
16 **NEW ORLEANS’S CONSUMERS OF THE SETTLEMENT AGREEMENT. CAN**
17 **YOU SUMMARIZE THE MOST SIGNIFICANT ONES IN ADDITION TO WHAT**
18 **YOU HAVE ALREADY DISCUSSED?**

⁹ UCTTC Meeting, July 26, 2017, the comment of Mr. Walter “Jeff” Wilkerson, Esq. at 2h 51m in the video record.

1 **A.** Yes. The establishment of an ENO only Transmission Pricing Zone (“TPZ”) in MISO –
2 thereby avoiding the subsidization of extensive new transmission construction of the other
3 Entergy Louisiana operating subsidiaries – saves New Orleans’ consumers millions of
4 dollars in transmission charges after the implementation of the provisions of the Settlement
5 Agreement. Council Member Jared C. Brossett, a member of the Council’s UCTTC,
6 perhaps said it best at the meeting of September 30, 2015 where the Settlement Agreement
7 was considered: “I don’t think the public knows how significant it is that we will have our
8 own Transmission Pricing Zone, that means a great deal for the ratepayers...”.

9 Additionally, for decades the System Agreement was the subject of contentious litigation.

10 As such, another significant benefit in the Settlement Agreement was the elimination of
11 further FERC litigation on System Agreement matters.

12 **VI. ENO’S APPLICATION**

13 **Q. MAY ENO REASONABLY TAKE NO ACTION AND SATISFY RELEVANT**
14 **SERVICE RELIABILITY STANDARDS REQUIREMENTS AND ASSURE**
15 **RELIABLE ELECTRIC SERVICE IN NEW ORLEANS?**

16 **A.** No. Taking no action would place ENO in violation of certain NERC reliability standards.
17 As Mr. Movish discusses in his testimony, ENO must have a plan to correct certain
18 deficiencies in its transmission system under NERC standards. Absent such a plan, ENO
19 and its customers will be placed at significant risk for long duration outages and potential
20 significant loss of customer load (i.e., utility service disruption to approximately 49,000

1 customers) in the event of certain transmission system contingency events. Without some
2 improvements by ENO in its system, whether by capacity addition, transmission upgrades,
3 or significant load reduction, such violation of NERC reliability standards will persist
4 unless ENO takes corrective action.

5 **Q. WOULD COUNCIL APPROVAL OF ONE OF ENO'S GENERATION**
6 **ALTERNATIVES IN ITS APPLICATION ALLOW ENO TO SATISFY ITS**
7 **RELEVANT SERVICE RELIABILITY STANDARDS REQUIREMENTS?**

8 **A.** Yes, Mr. Movish has concluded that either the CT Alternative or the RICE Alternative
9 would satisfy ENO's relevant NERC reliability standards. I note that Mr. Movish's opinion
10 in this regard relied on the review of materials provided by ENO that have been designated
11 as Critical Energy Infrastructure Information ("CEII").

12 **Q. HAS ENO DEMONSTRATED THAT THE CONSTRUCTION OF EITHER THE**
13 **CT ALTERNATIVE OR THE RICE ALTERNATIVE IS THE ONLY FEASIBLE**
14 **MEANS BY WHICH ENO MAY SATISFY ITS RELEVANT SERVICE**
15 **RELIABILITY STANDARDS REQUIREMENTS?**

16 **A.** No. Mr. Movish evaluated cases other than the construction of the CT Alternative or the
17 RICE Alternative. His review of CEII-designated materials provided by ENO through
18 discovery indicates that the Transmission Alternative as well as scenarios involving solar
19 and DSM-related load reduction would also satisfy the relevant NERC reliability standards
20 requirements.

1 **Q. HAVE ALTERNATIVES THAT RELY ON SOLAR RESOURCES BEEN**
2 **DEMONSTRATED TO BE ACHIEVABLE GIVEN THE ASSUMPTIONS ENO**
3 **EMPLOYED?**

4 **A.** It has not been shown that constructing or interconnecting solar capacity at or near the
5 Michoud site is feasible. Mr. Movish's review of ENO's transmission studies indicates that
6 capacity, including solar capacity, must be constructed or otherwise interconnected at the
7 transmission level at or near the Michoud site to beneficially impact ENO's NERC system
8 reliability standards compliance. Mr. Movish has observed that it is not demonstrated in
9 the instant docket that such solar capacity can be constructed at or near the Michoud Site.
10 Further, as discussed by Mr. Movish, ENO has used conflicting solar capacity factor
11 assumptions as between its transmission and economic planning analyses.

12 **Q. HAVE ALTERNATIVES THAT RELY ON WIND RESOURCES BEEN**
13 **DEMONSTRATED TO BE ACHIEVABLE GIVEN THE ASSUMPTIONS ENO**
14 **EMPLOYED?**

15 **A.** Similar as to with solar, the feasibility of wind capacity to beneficially impact ENO's
16 NERC system reliability standards compliance is undemonstrated because the
17 interconnection of wind capacity at or near the Michoud site has not been shown to be
18 feasible. Mr. Movish notes that certain wind capacity discussed by Intervenor has no
19 transmission path to ENO and therefore would be ineffective in addressing ENO's NERC
20 system reliability standards compliance.

1 **Q. ARE ALTERNATIVES THAT RELY ON TRANSMISSION UPGRADES**
2 **FEASIBLE?**

3 **A.** Yes, however Mr. Movish expresses significant concerns regarding the constructability of
4 the Transmission Alternative's transmission upgrades. ENO also is uncertain of the
5 feasibility of constructing such transmission upgrades in terms of time and money: "The
6 Company assumes that given enough time and money, the transmission upgrades
7 referenced in this case can eventually be constructed well after the time when they are
8 needed."¹⁰ Mr. Movish observes that transmission upgrades, once constructed, are modeled
9 as resolving ENO's NERC system reliability violations, but he has also noted that the
10 substantial risks to ENO's transmission system exist today. At some point, delayed action
11 (i.e., the uncertain timing of the completion of the transmission upgrades) presents the same
12 risks to New Orleans as does inaction (i.e., the unacceptable risk constituted by a "do
13 nothing" approach). As such, the Council should carefully weigh the risk to New Orleans
14 related to potential delays in implementing alternatives based on transmission.

15 **Q. THE RICE ALTERNATIVE PROVIDES FOR LOCAL BLACK-START**
16 **CAPABILITY. IS THAT A SUBSTANTIAL BENEFIT TO NEW ORLEANS AS**
17 **COMPARED TO THE CT ALTERNATIVE?**

¹⁰ ENO's response to the Advisors' DR CNO 12-1.

1 **A.** Yes. As the RICE Alternative can locally black start (i.e., without resources outside of the
2 Michoud site), it offers a substantial benefit compared to the CT Alternative.

3 **Q. IS MR. MOVISH’S BELIEF THAT THE RICE ALTERNATIVE CAN**
4 **POTENTIALLY PROVIDE POWER TO THE SEWERAGE AND WATER**
5 **BOARD OF NEW ORLEANS’ (“S&WB”) CARROLTON PUMPING PLANT IN**
6 **THE EVENT OF FAILURE OF PORTIONS OF THE S&WB’S ELECTRICAL**
7 **SERVICE A BENEFIT TO THE CITY?**

8 **A.** Yes. As Mr. Movish discusses, the RICE Alternative’s characteristics of being dispatchable
9 and having local black start capability could potentially enable the RICE Alternative to
10 provide power to the S&WB’s Carrolton pumping plant in the event ENO’s system is
11 otherwise without power and the S&WB’s generating capacity is impaired. Mr. Movish
12 notes that certain further ENO planning studies and operational procedures would be
13 required to assure the realization of this benefit.

14 **Q. HOW SHOULD THE COUNCIL VIEW THE RESULTS OF THE ECONOMIC**
15 **ANALYSIS PRESENTED BY MR. ROGERS IN CONJUNCTION WITH THE**
16 **RELIABILITY ANALYSIS DISCUSSED BY MR. MOVISH?**

17 **A.** The Council should perform its review with an emphasis on the considerations of system
18 reliability as discussed by Mr. Movish and the relative operational benefits of the RICE
19 Alternative as compared to the CT Alternative. As Mr. Rogers discusses, ENO has not
20 economically justified the CT Alternative because: (i ENO’s economic modeling of the

1 CT Alternative relies heavily on forecasted MISO PRA revenues¹¹ that he finds to be
2 questionable, and (ii) when employing his illustrative MISO PRA MCP, the CT Alternative
3 and the RICE Alternative have roughly the same economic attractiveness. Mr. Rogers notes
4 that the RICE Alternative presents a lesser economic risk than either the CT Alternative or
5 the Transmission Alternative, because its capacity is more aligned with ENO's forecasted
6 capacity needs than is the CT Alternative, which offers more capacity than ENO needs in
7 the near term or the Transmission Alternative, which offers no new capacity. Mr. Rogers's
8 testimony notes that the Transmission Alternative is most economically attractive among
9 the cases modeled by ENO, however, as Mr. Movish notes there are significant risks to
10 New Orleans involving constructability and timing for the Transmission Alternative. As
11 such, while the Transmission Alternative may be the most economically attractive, it
12 carries significant risks that should be quantified when compared to the CT Alternative or
13 the RICE Alternative.

14 The Council should consider the economic attractiveness of the CT Alternative, the RICE
15 Alternative, and the Transmission Alternative alongside the risks associated with each
16 alternative as identified by Mr. Movish and Mr. Rogers.

17 **Q. WHAT DO YOU MEAN BY RISK WHEN YOU DISCUSS THE ALTERNATIVES?**

¹¹ HSPM Exhibit SEC-13 models the CT Alternative as producing a \$113 million (PV) in MISO PRA net revenues as compared to \$33 million (PV) for the RICE Alternative.

1 **A.** For the purpose of evaluating the alternatives discussed by Mr. Movish and the economic
2 alternatives cases discussed by Mr. Rogers, my use of “risk” may be viewed as the
3 possibility that the outcomes and each associated assumption as modeled therein may not
4 come to pass, the degree to which the modeled outcome may differ from actual outcomes,
5 and the potential adverse effects on the public interest from actual outcomes differing from
6 modeled outcomes. Any sophisticated model represents the synthesis and analytical
7 evaluation of numerous inputs, which although apparently reasonable (except for the
8 variations in load and capacity factors previously noted in my testimony), are based on
9 what is known today and estimates of future conditions. As such, while Mr. Movish
10 indicates that each modeled scenario resolves ENO’s NERC system reliability violations,
11 he discusses certain unproven and unknown assumptions underlying some scenarios (e.g.
12 the time and actual cost required to construct the Transmission Alternative). Likewise, while
13 Mr. Rogers concludes that the RICE Alternative and the CT Alternative, as modeled, are
14 similarly economically attractive, among the two, the RICE Alternative is less sensitive to
15 changes in the MISO PRA MCP, has a better heat rate, and operationally provides more
16 dispatch flexibility.

17 **Q. WHAT FACTORS DO YOU RECOMMEND THE COUNCIL TAKE INTO**
18 **ACCOUNT WHEN CONSIDERING ALTERNATIVES BASED ON SOLAR OR**
19 **WIND CAPACITY ADDITIONS?**

20 **A.** As Mr. Movish concludes that the feasibility of these technologies ability to deliver
21 capacity where needed to resolve ENO’s NERC system reliability violations (i.e., at or near

1 the Michoud site) is unproven, the Council should give particular consideration to the
2 reality of the assumptions employed in modeling these scenarios as discussed by Mr.
3 Movish and earlier in my testimony and weight the risk associated with these against other
4 alternatives presented.

5 **Q. WHAT FACTORS DO YOU RECOMMEND THE COUNCIL TAKE INTO**
6 **ACCOUNT WHEN CONSIDERING THE TRANSMISSION ALTERNATIVE,**
7 **GIVEN THE PRESENT STATE OF ENO'S TRANSMISSION SYSTEM AND**
8 **LOAD REQUIREMENTS?**

9 **A.** As Mr. Movish has stated that the timing, and cost of completion of the necessary
10 transmission upgrades required to resolve ENO's NERC system reliability violations is
11 uncertain, and recommends further detailed evaluations and cost estimates prior to final
12 Council approval, the Council should consider the current risk of a system reliability
13 occurrences that could persist until the transmission upgrades were complete and weigh
14 this risk as compared to the RICE Alternative and the CT Alternative whose construction
15 completion dates can be comparatively reliably forecasted and whose costs are
16 comparatively much more known.

17 **Q. AMONG THE CT ALTERNATIVE, THE RICE ALTERNATIVE, AND THE**
18 **TRANSMISSION ALTERNATIVE, WHICH ALTERNATIVE PRESENTS THE**
19 **LEAST RISK, AND MOST OPERATIONAL BENEFIT TO NEW ORLEANS'**
20 **SYSTEM RELIABILITY?**

1 **A.** Based on my review of Advisor testimony, the RICE Alternative presents the least risk
2 compared to both the CT Alternative and the Transmission Alternative. The RICE
3 Alternative is expected to take roughly one-year less to construct than the CT Alternative
4 and at least two-years less than the Transmission Alternative based on ENO's economic
5 modeling (as Mr. Movish discusses, ENO has no reliable estimate of when the
6 Transmission Alternative can be competed). As such, the currently existing NERC system
7 reliability violations would be addressed most quickly by the RICE Alternative as
8 compared to the CT Alternative and the Transmission Alternative. As compared to the
9 Transmission Alternative, the constructability of both the RICE and CT Alternative(s) is
10 reasonably ensured. Between the generation alternatives ENO proposed at Michoud, the
11 RICE Alternative's economic modeling has the least reliance upon MISO PRA revenues
12 in support of its economic analyses, and as such, ratepayer impact and risk due to
13 unpredictable changes in MISO PRA MCPs is likely less for the RICE Alternative. The
14 operational characteristics of the RICE Alternative, in particular the RICE Alternative's
15 local black start capability would serve to reduce risks to New Orleans under certain
16 adverse weather events. Neither the CT Alternative nor the Transmission Alternative offers
17 this capability.

18 Additionally, as compared to the wind or solar-based alternatives (aside from their
19 questionable locational assumptions), the RICE Alternative provides dispatchable
20 capacity, which is not at risk due to the intermittent availability of wind or solar irradiance.

VII. COST RECOVERY

Q. PLEASE DESCRIBE THE COST RECOVERY MECHANISM ENO IS REQUESTING THE COUNCIL APPROVE IN THE INSTANT DOCKET.

A. As Mr. Prep discusses in greater detail, ENO is proposing an interim “exact cost recovery mechanism” similar to that of the Purchased Power Capacity Acquisition Cost Recovery (“PPCACR”) Rider, which currently provides for the cost recovery of fixed costs related to the Ninemile 6 and Union PB1 generating units.

Q. IS AN INTERIM EXACT-COST RECOVERY MECHANISM APPROPRIATE FOR COSTS ENO MAY INCUR RELATED TO THE CONSTRUCTION OF ANY GENERATING UNIT THE COUNCIL MAY APPROVE IN THE INSTANT DOCKET?

A. No, as Mr. Prep discusses and demonstrates citing relevant regulatory decisions, sound regulatory principles generally prohibit single issue ratemaking, which the interim rider requested by ENO would constitute. Further, ENO has not demonstrated that it would suffer adverse financial consequences if an interim exact cost recovery mechanism were not approved by the Council. Finally, Mr. Prep discusses an alternative cost recovery mechanism, an adjustment to base rates, that would be a more appropriate cost recovery mechanism as compared to a rider.

Q. DOES ENO HAVE A RIGHT TO THE REASONABLE OPPORTUNITY TO RECOVER ITS PRUDENTLY INCURRED COSTS?

1 **A.** Generally recognized regulatory principles provide that a utility such as ENO has the right
2 to the opportunity to recover its prudently incurred costs, including a reasonable return on
3 its investment in the utility (i.e., a return on common equity). As Mr. Prep discusses, ENO
4 is entitled to a fair opportunity to recover its prudently incurred costs, but that entitlement
5 does not extend to a contemporaneous exact cost recovery mechanism.

6 **Q. DO YOU AGREE WITH MR. PREP’S IDENTIFICATION OF AN ACCEPTABLE**
7 **COST RECOVERY MECHANISM OF COSTS RELATED TO ANY**
8 **INVESTMENT IN A GENERATING UNIT THE COUNCIL MAY APPROVE IN**
9 **THE INSTANT DOCKET?**

10 **A.** Yes, Mr. Prep has demonstrated that a special rider is inappropriate and unnecessary to
11 allow ENO recovery of its prudently incurred costs related to any investment in a
12 generating unit the Council may approve in the instant docket. I agree with Mr. Prep that
13 ENO reasonably can pro form fixed costs related to any of the alternatives the Council may
14 approve into its cost of service studies as part of its Combined Rate Case application. I
15 further agree with Mr. Prep that the Council may appropriately approve a base rate step-up
16 effective upon the completion of any of the alternatives that the Council may approve.

17 **Q. ENO HAS PROPOSED THAT THE LTSA MAINTENANCE COSTS FOR NOPS**
18 **BE RECOVERED THROUGH THE FUEL ADJUSTMENT CLAUSE (“FAC”)**
19 **RIDER. DO YOU AGREE WITH ENO’S PROPOSED LTSA COST RECOVERY**
20 **MECHANISM?**

1 **A.** No, I do not as ENO's proposal would include more fixed costs in ENO's FAC at a time
2 when the Council should be considering in the Combined Rate Case the elimination of such
3 occurrences in the interest of an equitable cost allocation among the rate classes. The FAC
4 was originally designed to flow variable costs such as fuel through to ratepayers. Continued
5 loading in the FAC of fixed costs is contrary to this intent and as Mr. Prep demonstrates an
6 improper allocation of said costs. As Mr. Prep states in his direct testimony, LTSA costs
7 are expected to be regularly occurring and predictable. As such, ENO should be allowed
8 to recover any prudently incurred LTSA costs through the same fixed-cost recovery
9 mechanism the Council may approve for other fixed costs related to any generating unit
10 the Council may approve. Further, and as Mr. Prep also discusses, recovering fixed costs
11 through a per kWh-based recovery mechanism such as the FAC does not afford such costs
12 customary functionalization and cost allocation treatment. As Table 1 from Mr. Prep's
13 testimony demonstrates, for large commercial customers the allocation of fixed costs
14 according to a kWh allocation results in higher costs for that rate class than would a more
15 properly base rate cost allocation.

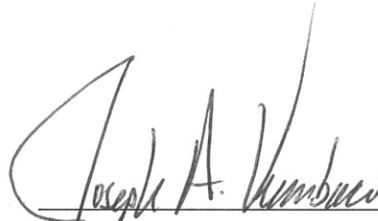
16 **Q. DOES THIS CONCLUDE YOUR TESTIMONY?**

17 **A.** Yes.

AFFIRMATION

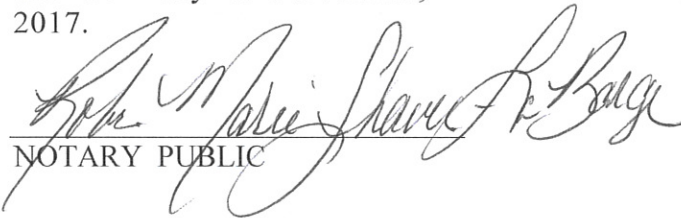
STATE OF COLORADO)
)
COUNTY OF DENVER)

I, Joseph A. Vumbaco, am the person identified in the attached Testimony and such testimony was prepared by me or under my direct supervision; the answers and information set forth therein are true to the best of my knowledge and belief, and if asked the questions set forth therein, my answers thereto would, under oath, be the same.



Joseph A. Vumbaco

Subscribed and sworn to before me
this 20th day of November,
2017.



NOTARY PUBLIC

